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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/099,742	06/18/1998	LUKE Y. CHANG	MSFT-0975	7813

7590 08/09/2004

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EXAMINER	
MEHRA, INDER P	
ART UNIT	**PAPER NUMBER**
2666	19

DATE MAILED: 08/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/099,742	CHANG ET AL.	
	Examiner	Art Unit	
	Inder P Mehra	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2004* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10,12-20,22-30,32 and 33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *27-30 and 33* is/are allowed.

6)☒ Claim(s) *1-8,10,12-20,23-26 and 32* is/are rejected.

7)☒ Claim(s) *22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 August 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Response to Amendment

1. This is in response to amendment dated 10/27/03, Amended claims 1 (five times, in amendments B, C, D and E), 3 (four times , in amendments B, C, D and E), 8 (twice, in amendments C and D), 12(amended once in amendment E), 13 (four times , in amendments B, C, D and E), 15 (four times, in amendments B, C D and E), 20 (once in amendment C) and 27 (twice, in amendments B and C) have been entered. Further, claims 9, 11, 21 and 31, which have been cancelled (in amendments C and E) is noted. Pending claims are 1-8, 10, 12-20, 22-30 and 32-33.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 3, 13, and 15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims1, 3, 12, 13, and 15 are amended to recite, "distributing the packets to decode units ***In an order to***" . This amended limitation is not supported by specification, refer to page 4 lines 9-11 and page 5 lines 15-17. It was pointed out in 'Advisory Action" dated 11/17/03. At page 36 lines 16-19, specifications disclose, "The pixel sync logic 68----the H pixels from each decode unit 66 are output in the correct order". This disclosed limitation is not the same as claimed

limitation as amended. As claimed, distributing ***to decode unitsin order, versus,*** the H pixels from each decode unit 66 ***are output in the correct order".***

Appropriate correction or clarification is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3, 4-6, 13-15, and 16-18, are rejected under 35 U.S. C. 103(a) as being unpatentable over **Franaszek et al** (US Patent No.5,729,228), hereinafter Franaszek in view of **Bigham** (US Patent No.5,544,161), and further in view of **Rostoker et al** (US Patent No. 5,872,784), hereinafter, Rostoker, **Auld** (US Patent No. 5,686,965), and **Schwartz et al** (US Patent No. 5,717,394), hereinafter Schwartz.

Regarding claims 1, 3, 13 and 15, Franaszek discloses, in reference to figs. 1, 2 and 3, a method for parallel compression and decompression, refer to col. 2, lines 35-47; and

Franaszek discloses, in reference to fig. 2, col. 2 line 51, the following:

- bitstream separated into blocks (b 1 221, b2 222, b3 223 and b4 224, called components);
- uses compression algorithm (col 1, lines 36-39) and encodes the blocks using compression algorithm (refer to col. 3, lines 25-27 and 62-64);

- in fig. 3, the compressed block is divided into sections by the splitter 330 (separating packets from the packetized bitstream); the compressed block is divided into sections by the splitter 330 which uses "prefix area" which further uses compressed length (derived from header information) ***(separated from the bit srteam using the header information),*** refer to col. 2 lines 60-65, col. 3 lines 20-25.

- illustrating how a previously compressed block 260 is decompressed using parallel decompression, refer to col. 3, lines 16-17 and further, illustrates in fig. 7 parallel decompression and decodes the packets , refer to col. 5, lines 33-45;
- updating the corresponding portions (constructing the plurality of components from the recovered encoded data), refer to col. 5, lines 55-57; and
- consolidates the components via output data combiner 841 in fig. 8 (combining the plurality of components to recover the bit stream).

Franaszek does not disclose expressly a packet comprises header information and encoded data; and combining the packets into a packetized encoded bitstream;

Bigham discloses digital encoder MPEG-2 118, fig. 2, and transport stream packet (bit stream packet) which consists of header section and payload section and are identified by program identification number (packet comprises header information and encoded data), refer to col. 10, lines 59-64 and col. 11, lines 32-40. Further, Bigham discloses combined ATM bit

stream before transport to ATM edge multiplexer120 or SONET MUX122, refer to fig. 2 and refer to col. 11, lines 50-53.

Franaszek in view of Bigham does not disclose expressly encoding components of pixels using compression algorithm; and length in header information;

Rostoker discloses encoder estimates motion vectors for each 16x16 macroblock in the picture. Each macroblock consists of a 16-pixel by 16 line section of luminance ***component*** and two spatially corresponding 8-pixel by 8-line sections, one for each ***chrominance component.*** Motion vectors, which give the displacement from the stored previous picture, are encoded in the MPEG bitstream.

Further, Rostoker discloses "**predict the occurrence of start codes 385** in the system bitstream 373 based on the length field of the previously occurring **header 381**, see step 408 of fig. 12" (***length in the header information, as recited in amended claims 1,3,13 an15***), refer to col. 15 lines 42-45;

Auld also discloses, "packet data containing emulation of sync codes of other bit stream data; system synchronization 62 will continue to **predict the occurrence of video sync code in the bit stream (predictor)**, refer to col. 10 lines 46-67;

Schwartz discloses "fixed length interleaved words ***in order required by the decoder, refer to col. 3 lines 7-10; reordering data in into the original order, refer to col. 7 lines 15-20, and outputs reconstructed data, refer to col. 7 lines 5-6.***

A person of ordinary skill in the art would have been motivated to employ Auld's two-part synchronization scheme, Rostoker's high speed digital network apparatus and Bigham's video distribution network into Franaszek's parallel Compression and Decompression in order to

have packets used for parallel compression and decompression. The suggestion/ motivation to do so would have been obvious to have ATM packets which provide greater flexibility in enabling MPEG-2 encoding and synchronization. Further, it is obvious to a person of ordinary skill in the art to understand that scan lines inherently include pixels which inherently include components, as recited in specifications, refer to specification page 17 and lines 7-8. This combination will provide synchronization of data packets efficiently and reliably.

Regarding claims 2, 4, 14 and 16, Franaszek does not disclose bit stream digitized graphics or video frame; and the digitized graphics and video frames for display.

Bigham discloses graphics and video information in digital signals, refer to col. 4, lines 35-40, and col. 23 line 15; and digitized graphics and video for display, (refer to col. 31, lines 414.

A person of ordinary skill in the art would have been motivated to employ Bigham's video distribution network into Franaszek's parallel Compression and Decompression in order to provide video and graphics in digital stream to facilitate parallel compression and Decompression. The suggestion/ motivation to do so would have been logical to have ATM packets which provide greater flexibility in enabling MPEG-2 encoding.

Regarding claims 5-6 and 17-18, Franaszek discloses encoding the components using Lempel Ziv compression (Lossless compression algorithm), refer to col. 1, lines 35-38.

6. Claims 7-8, 10, 12, 19-20, 23-26 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Franaszek et al** (US Patent No.5,729,228), hereinafter Franaszek in view of **Bigham** (US Patent No. 5,544,161), and further in view of **Rostoker et al** (US Patent No. 5,872,784), hereinafter, **Auld** (US Patent No. 5,686,965)Rostoker and **Schwartz et al** (US Patent No. 5,717,394), hereinafter Schwartz.

Regarding claims 7-8, 10, 19-20 and 23, Franaszek discloses, " wherein the header information----comprises an alignment, refer to col. 10 line 45;

Franaszek in view of Bigham, Rostoker and Auld do not disclose expressly constructing packets from the encoded components including both variable length and fixed length packets.

Schwartz discloses both variable length codewords (16 packets,fig. 4), refer to col. 28, lines 51-54, and fixed length packets , refer to col. 28, lines 56-57.

A person of ordinary skill in the art would have been motivated to employ Schwartz's apparatus for encoding and decoding data into Franaszek's parallel Compression and Decompression in order to provide parallel encoding and decoding. The suggestion/ motivation to do so would have been logical to remove bit level manipulation of the data stream and thus increase the speed of processing by parallelization method.

Regarding claims 12 and 24-25, Franaszek in view of Bigham, Rostoker and Auld do not disclose expressly header information including tag; and distribution of packets to separate decode units on the basis of tag.

Schwartz discloses, in reference to fig. 3, a preface header containing pointers (tag) to the beginning of bit location of each bit stream ,refer to col. 8, lines 21-22; and retrieval of packets

from the proper location via proper pointer (tag), refer to col. 8, lines 29-31. Sschwartz discloses, "codewords are retrieved from the proper location via the proper pointer", refer to col. 8 lines 28-31, **which is clearly a tag information**. A preface header contains pointers to the beginning bit location ---and complete compressed data file is available ---**to a decoder**, refer to col. 8 lines 25-30.

A person of ordinary skill in the art would have been motivated to employ Auld's system, Schwartz's apparatus for encoding and decoding data into Franaszek's parallel Compression and Decompression in order to provide parallel encoding and decoding. The suggestion/ motivation to do so would have been logical to remove bit level manipulation of the data stream and thus increase the speed of processing by parallelization method while maintaining efficiency of compression and decompression.

Regarding claim 26, Franaszek in view of Bigham, Rostoker and Auld do not disclose expressly queue to receive packetized encoded data in bit stream .

Schwartz discloses the use of queue to allow ordered data stream, refer to col. 19 lines 59-64.

A person of ordinary skill in the art would have been motivated to employ Auld's system, Schwartz's apparatus for encoding and decoding data into Franaszek's parallel Compression and Decompression in order to provide parallel encoding and decoding. The suggestion/ motivation to do so would have been logical to remove bit level manipulation of the data stream and thus increase the speed of processing by parallelization method while maintaining efficiency of compression and decompression.

Regarding claim 32, Franaszek in view of Bigham, Rostoker and Auld do not disclose expressly scan line **as** HDTV line.

Schwartz discloses HDTV as excellent choice for the system of his invention, refer to col. 56 and lines 25-35;

To a person of ordinary skill in the art, it is obvious to have scan line comprising HDTV line in HDTV system. A person of ordinary skill in the art would have been motivated to employ Schwartz's apparatus for encoding and decoding data into Franaszek's parallel Compression and Decompression in order to provide parallel encoding and decoding. The suggestion/ motivation to do so would have been logical to include HDTV system application into video distribution network. It would have been obvious to a person of ordinary skill in the art to use decoding system coupled to compressed image data system in order to provide transformation and sub-sampling portion of HDTV decoder.

Allowable Subject Matter

7. Claims 27-30 and 33 are allowed.

8. Claims 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments with respect to claims 1-8, 10, 12-20, 22-30 and 32-33. have been considered but are not persuasive.

a. Applicant argues that examiner has relied on four references ***to make the obviousness rejection***, while number references alone may not be grounds for overcoming the rejection, it does warrant carefully consideration of the combination to insure that there is proper motivation to combining the references and to insure that the examiner not engaged in using the claim as template to pick and choose elements from the prior art".

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, a person of ordinary skill in the art would have been motivated to employ Auld's two-part synchronization scheme, Rostoker's high speed digital network apparatus and Bigham's video distribution network into Franaszek's parallel Compression and Decompression in order to have packets used for parallel compression and decompression. The suggestion/ motivation to do so would have been obvious to have ATM packets which provide greater flexibility in enabling MPEG-2 encoding and synchronization. Further, it is obvious to a person of ordinary skill in the art to understand that scan lines inherently include pixels which inherently include components, as recited in specifications, refer to specification page 17 and lines 7-8. This combination will provide synchronization of data packets efficiently and reliably.

Applicant argues that references fail to teach at least distributing the packets to the decoders ***in order,***

In response, it is stated that the amended limitation "in an order to reconsider the digitized graphic or video frame" (**INSTEAD OF** "in order"), AS NEWLY AMENDED CLAIM, ***is not supported by specifications***, refer to page 4 lines 9-11, and page 5 lines 15-17. Digitized graphic or video frame has to be decoded ***in an order*** so as to be composite picture made up of essential characteristics. Schwartz discloses "fixed length interleaved words ***in order required by the decoder, refer to col. 3 lines 7-10; reordering data in into the original order, refer to col. 7 lines 15-20, and outputs reconstructed data, refer to col. 7 lines 5-6.***

Applicant argues that the use of tags for the distribution of packets is "simply absent from all of references cited by the examiner and is absent from Sschwartz in particular.

In response, it is stated that Sschwartz discloses, "codewords are retrieved from the proper location via the proper pointer", refer to col. 8 lines 28-31, which is clearly a tag information. A preface header contains pointers to the beginning bit location ---and complete compressed data file is available ---to a decoder, refer to col. 8 lines 25-30.

In light of above explanation, arguments by applicant are not persuasive.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Inder P Mehra whose telephone number is 703-305-1985. The examiner can normally be reached on 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 703-308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Inder Pal Mehra
Inder P Mehra
Examiner
Art Unit 2666

FRANK DUONG
PRIMARY EXAMINER